

ERIOCEREOPHAGA HUMERIDENS, A NEW GENUS
AND SPECIES AND POTENTIAL
BIOLOGICAL CONTROL AGENT FROM BRAZIL
(CRYPTORHYNCHINAE, CURCULIONIDAE, COLEOPTERA)¹

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ABSTRACT

This new monotypic genus (and new species) of Brazilian cactus feeding weevil, being considered as a biological control agent for *Eriocereus* cactus in Australia, is described. Outline illustrations of its habitus and of the male and female genitalia are included, as are diagnoses of related or similar neotropical genera.

Recently I was asked to identify an unusual Brazilian weevil being considered as a potential biological control agent for *Eriocereus* cactus in Australia. After a careful check of the literature and a study of the types of many related genera and species in European museums, I determined that it represents an undescribed genus and species in the subfamily Cryptorhynchinae, tribe Cryptorhynchini, subtribe Tylodina.

All of the specimens used in this study were laboratory reared from parent stock collected as larvae and pupae in the cactus *Eriocereus adscendens* (Gurke) from near Arcoverde, Pernambuco, Brazil and from various localities in the states of Bahia and Pernambuco. Additional hosts known are seedling cacti of 2 other genera, *Cereus jamacaru* DeC. and *Cephalocereus gounellei* Weber (R. E. McFadyen, Pers. Comm.). Dr. McFadyen will publish on the biology of the weevil and I shall publish a separate paper on the morphology of the immature stages.

Eriocereophaga O'Brien, **new genus.**

Large, body robust, in large part clothed with scales. Rostrum shorter than prothorax, received in deep sternal groove in prosternum and mesosternum. Eye (if rostrum at rest in sternal groove) ca. 1/2 covered by rather weakly developed ocular lobe. Antennae with 7 funicular segments, these with moderately coarse bristles, only segments 1 and 2 slightly elongate; club annulate, densely finely pubescent; scrobe deep, dorsal margin directed towards basal 1/3 of eyes. Prothorax wider than long, rugosely unevenly punctate and/or tuberculate, fasciculate, strongly and deeply constricted near apex. Scutellum minute, scarcely or not visible. Elytron 10 striate, 10th stria ending opposite hind coxa, striae strongly punctate, each puncture with round or elongate scale; humeri lacking; suture fused; hind wings lacking. Metepisternum fully developed, clearly visible. Abdominal sternum 2 nearly as long as 3 and 4 together, subequal to 5; sutures deep, weakly curved to straight. Femora elongate, slender, unarmed. Tibiae uncinata and with minute scarcely visible praemucro. Tarsal claws small, fine, and simple.

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Etymological note. This feminine generic name is the result of combining 2 words, the Greek-Latin hybrid, *Echinocereus*, the genus of host cactus of the type series, and the Greek *phagein* = to eat.

Taxonomic notes. This monotypic genus keys to couplet 11 in Fiedler's (1940) key to the American genera of Tylodina, with *Pseudoacalles* and *Tylodinus*. Species of *Pseudoacalles* are presently known only from the southern United States and the West Indies and have a long slender rostrum and distinctly toothed (armed) femora. Species of *Tylodinus* are from Mexico and Central America and have a basally strongly widened rostrum, several well-developed basal dorsal elytral tubercles, and the first 2 funicular segments greatly elongated.

Eriocereophaga closely resembles species of the tropical New World genus *Tyloides*, but the latter have the metepisternum not visible and the basal 3 or 4 funicular segments elongate. Species of *Gerstaeckeria*, cryptorhynchine cactus weevils from Peru, Ecuador, Mexico, the United States, and Canada, are also similar to *Eriocereophaga*, but can be readily separated by their lack of visible metepisterna and the strong expansion of the basal portion of the rostrum from the antennal insertion. These genera also lack the strong circumocular and transverse frontal groove.

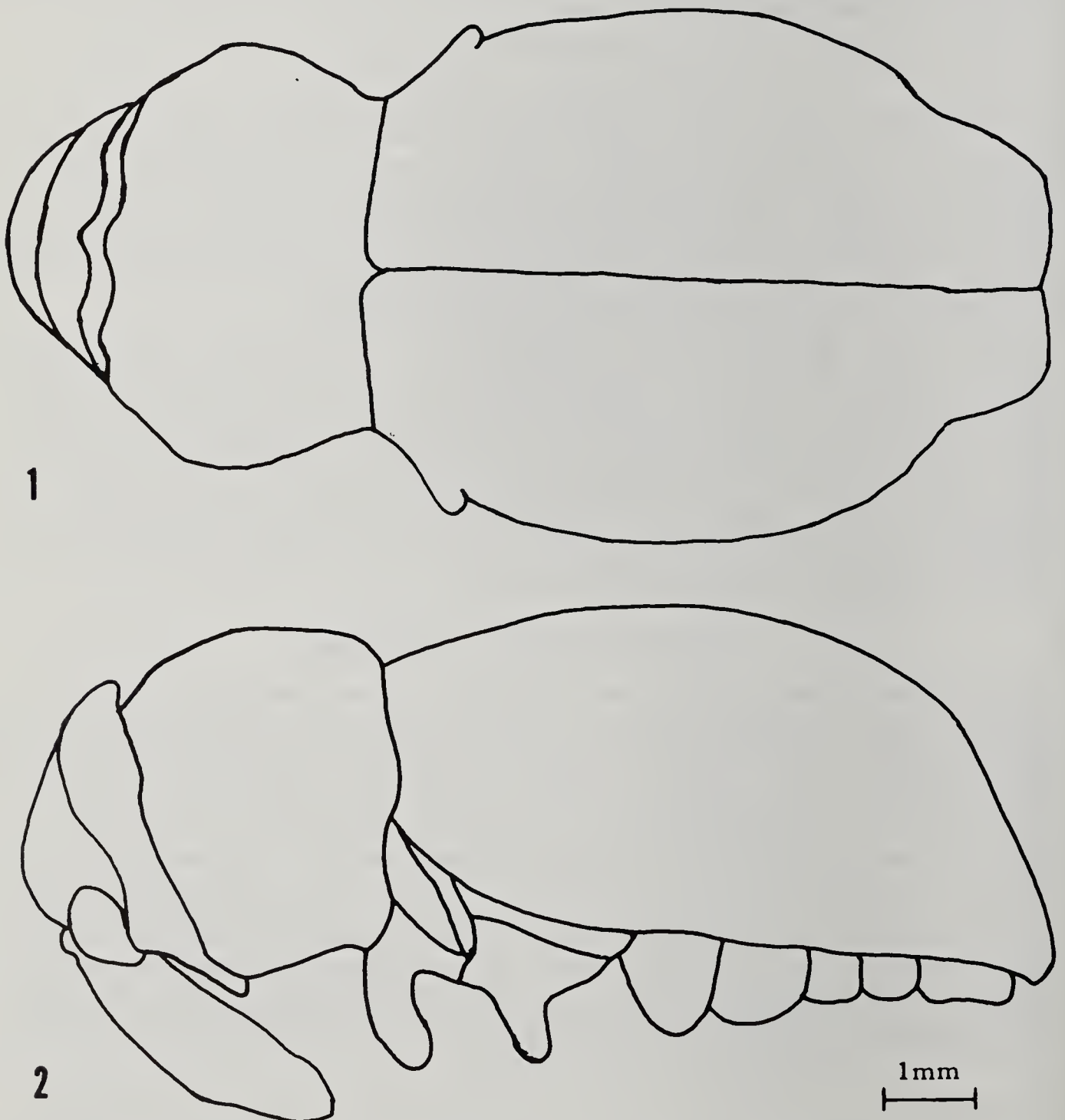


Fig. 1-2 *Eriocereophaga humeridens* holotype male: 1) dorsal view; 2) lateral view.

Eriocereophaga humeridens O'Brien, new species.

Black to piceus, clothed with brown, white and black scales.

Holotype: Male. Length, pronotum and elytron, 11.1 mm. Rostrum very stout, weakly curved; with distinct median carina on basal 2/3; lateral margins straight in basal 1/2, curved and expanded above antennal insertion, apex strongly expanded, basal 1/2 with deep longitudinal lateral groove clothed with dense erect white and tan scales (groove dorsally continuous around eyes to posterior margin and across frons between eyes), cuticle reticulate between groove and glabrous shining carina, basal 1/6 of carina broad and irregular, broadest at base and completely reticulate; basal of 2/3 of rostrum coarsely unevenly punctate; apical 1/3 finely, more evenly punctate, shining, not reticulate. Antenna inserted at apical 1/3, red brown to black; funicular segments 1 and 2 elongate, subequal; 3, 4 and 5 shorter than 1, subequal; 6 and 7 short, broadly transverse; all segments with long moderately sparse setae, 7 also with moderately dense recumbent pubescence; club short, subacuminate. Head strongly convex, reticulate, with large deep unevenly spaced punctures, many confluent, with fine to coarse setae and/or scales in punctures, some confluent punctures forming median longitudinal groove near apex to middle of vertex, groove with coarse erect scales; with fine, shining, glabrous, contiguous, dense, transverse striate grooves near base (hidden by prothorax if rostrum is not at rest in sternal groove); eye subreniform, weakly convex.

Prothorax transverse, ca. 1/7 to 1/8 broader than long, apex narrower than base, strongly angled behind middle, strongly, deeply constricted behind apex dorsally and laterally to margin of prosternal sulcus; dorsally area anterior to groove steeply slanting, posterior margin of area somewhat carinate, with distinct median emargination, with (narrow glabrous finely sparsely punctate) transverse anterior margin, remainder densely clothed with recumbent black scales, with 5 transversely spaced white spots, median spot in and in front of emargination; disc convex behind transverse constriction, reticulate anterior median half with broad carina, anterior 1/4 with lateral impunctate areas, behind with lateral submedian tubercles, tubercles fasciculate with dense black scales, opposite these lateral margins with fasciculate tubercles at widest point of prothorax, tubercles fasciculate with dense white and black scales; posterior 1/2 of disc rugosely punctate and/or tuberculate; main body of disc with sparse black, white, and/or brown scales.

Elytra strongly inflated, moderately constricted basally, with distinct lateral scale covered process behind constriction; disc mainly clothed with dense scales; base in front of constriction and flat sutural interval reticulate, with very sparse small scales; other intervals weakly convex, except interval 9 very strongly convex from declivity to apex; all densely clothed with broad, recumbent, imbricate white and brown scales and fascicles of suberect black scales, and with uneven rows of suberect, elongate brown and/or white scales; color pattern subfasciate, pale fasciae posthumeral, postdeclivital, and subapical; apex behind declivity suddenly narrowed, conjointly rounded; striae punctures distinct, largest on disc and 1st striae, gradually smaller laterally and posteriorly, striae between punctures strongly longitudinally convex, nearly scale-covered, usually poorly defined. Venter reticulate, unevenly punctate and unevenly scale covered. Fore and mid coxae separated by width of coxa. Mesosternum strongly convex externally, emargination broadly evenly U-shaped, internally strongly deeply concave; externally densely scale covered. Metasternum with moderately large deep scale clothed median depression. Abdominal sternum 1 with distinct transverse sulcus behind anterior margin, median part of sulcus V-shaped; with dense erect to suberect scales in groove; remaining area with sparse uneven punctures and scales. Sutures deep and rather broad, 1st suture weakly curved medially (to slightly emarginate), remaining sutures nearly straight. Sternum 5 trifoveate, median fovea expanded to a broad depression with hind margin subcarinate; lateral foveae very deep, ca 1/4 to 1/3 diameter of median depression.

Legs with dense white and brown recumbent to erect coarse scales; tibiae with narrow reticulate line lacking scales on entire inner margin; tarsi clothed ventrally with fine dense pubescence, 3rd segment strongly bilobed, slightly less than twice as wide as 2nd segment.

Allotype: Female. Length, pronotum and elytron, 10.6 mm. Scarcely separable externally from male. Abdominal sternum 5 with median fovea slightly smaller than lateral foveae, median area weakly depressed, all 3 foveae very deep, hind margin indistinctly raised.

Etymological note. This epithet results from the combination of 2 Latin words, *humerus*=shoulder and *dens*=tooth, which refer to the distinct humeral tooth (or tubercle) on the elytra.

Remarks with notes on variation. At hand are 52 adults, 4 pupae, 8 larvae and 9 fully developed eggs. All of the adults were reared, and 5 are incompletely developed or badly damaged so are not included in the type-series. The adults range in size from 8.8 mm. to 12.1 mm. There are minor variations in color pattern,

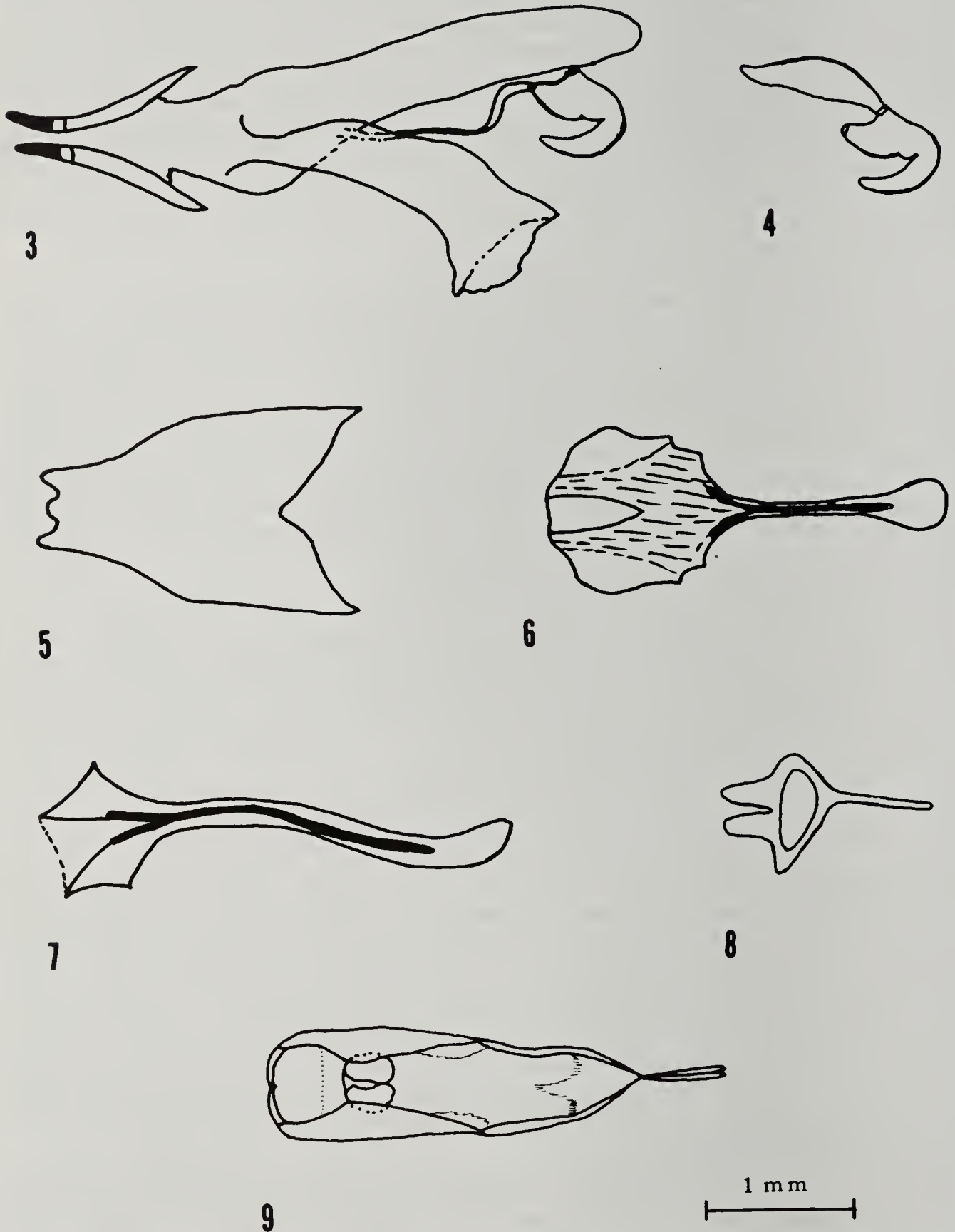


Fig. 3-9 *Eriocereophaga humeridens*: 3) dorsal view, female, ovipositor, vagina, oviduct, bursa copulatrix, spermathecal duct, spermatheca; 4) female, lateral view spermatheca, spermathecal gland; 5) female dorsal view, 8th tergite; 6) female dorsal view, 8th sternite; 7) male, dorsal view spiculum gastrale; 8) male, dorsal view, 8th sternite, ("tegmen"); 9) male, dorsal view, phallus.

but in general the specimens on hand are quite uniform. The only significant exception is in the degree of sculpture and punctation of the thoracic disc. The punctures may be dense or sparse and are found among the rugosities and/or tubercles which vary greatly in density and development. The lateral and submedian tubercles are always present but may be weakly to very strongly developed. The same is true for the median carina. The rugosities on the posterior half of the disc are especially variable in their development.

Range. Known only from northeastern Brazil, in the states of Pernambuco and Bahia. *Pernambuco*: near Arcoverde (Type-Locality); northern Pernambuco, at Paraíba borders. *Bahia*: between Juazeiro and Senhor do Bonfim; Jequie; near Riacho do Jacuipé (R. E. McFadyen, Pers. Comm.).

Material Examined. Holotype, allotype, and paratypes are deposited in the collection of the Universidade do Paraná, Curitiba, Brazil. Paratypes and/or non-type material are also in the following collections: British Museum (Natural History), London, England; Commonwealth Institute of Biological Control, Curepe, Trinidad; Commonwealth Scientific and Industrial Research Organization, Canberra, Australia; Instituto Miguel Lillo, Tucuman, Argentina; Museu de Zoologia, São Paulo, Brazil; Museu Nacional, Rio de Janeiro, Brazil; National Museum of Natural History, Washington, D. C.; C. W. O'Brien Collection, Florida A & M University, Tallahassee, Fl.; and E. L. Sleeper Collection, Long Beach, CA.

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